

ABSTRACT

The invention concerns a compass having an electro magnetic half-shell transformer energy transmission and opto electronic data transmission. To avoid a sliring connection during the transfer of supply voltage at least one winding on the primary half-shell is connected to a controllable input voltage source via a H-bridge circuit, and at least one secondary winding having taps is provided at the other half-shell coil.

Please replace the following paragraphs of the specification as appropriate. Note that the paragraph numbers are taken from numbering listed in the pre-grant publication of the application. The paragraphs appear on pages 2, 4, and 4, respectively, of the specification as filed.

[0012] The components represented in FIG. 1 include in particular a stable voltage supply 10 which offers direct current output of approximately 60 to 70 V-mA at an operating voltage of 10 to 40 V, and a high-precision H-bridge circuit (complementary power transistors which with pulsed control create an adjustable voltage through appropriate capacitors). This H-bridge circuit is illustrated as component 12.

[0021] Here the two H-bridge halves are symmetrically triggered and the MOSFET transistors of the H-bridge bridge are triggered with a defined clearout lag such that the residual energy from the inductances and the parasitic capacitances "clears" the halves. That means that the not negligible residual charges of the circuit are fed back directly into the feed at the switchover point, so that the efficiency is higher and the source voltage is less heavily pulse-loaded.

[0023] A Gray-code disk 50 driven with a belt drive via a stepping motor 48 is suggested merely schematically in FIG. 2. One side of the half-shell energy transformer 40 is adjoined to this disk. This encoder supplies the angular position for the follow-up control. Above this the internal CAN-bus interface is indicated by the components 30 and 32, and an optical scanning 52 of the Gray-code disk 50 is shown. In the lower region the spherical casing 36 is suspended on a pendulum joint 38 and contains the bearing liquid, the pump and the heating as well as the rotating gyrosphere maintaining its position. The heading tap of the sphere is accomplished at high frequency at approximately 50 kHz. Reference no. 34 designates a connection for all supply, control and signal lines.